

**Details of Staff Proposal To Use Fire Protection as an Example Program To
Resolve the Level of Programmatic Information Needed for Approval
of a Combined License Without Inspections, Tests,
Analyses, and Acceptance Criteria**

This attachment provides details of the staff's proposal to use fire protection as an example program of the level of programmatic information needed for approval of a combined license (COL) without inspections, tests, analyses, and acceptance (ITAAC) for a program. In the main body of this paper the staff proposed that the following information should be provided for the fire protection program at the COL stage in order to issue a COL without ITAAC for that program.

In the *Federal Register* notice (FRN) dated July 24, 2003 (68 FR 43767), the staff referenced the guidelines that should be followed for the fire protection program at the COL stage in order to issue a COL without ITAAC for that program. The staff proposed to use the fire protection provisions for the AP600 standard nuclear reactor design and the Callaway Plant as a starting point to develop these guidelines. The staff chose the AP600 because it represents the most current review for a standard design that has been certified in accordance with 10 CFR Part 52. The staff chose the Callaway Plant because it represents a plant that was recently licensed in accordance with 10 CFR Part 50 and its final safety analysis report (FSAR) contains information for the fire protection program that is not contained in the AP600 analogous document (i.e., the AP600 design control document (DCD)). The AP600 DCD does not contain this information because it identifies many fire protection program issues as the responsibility of the COL applicant.

Callaway was also chosen because it represents a standardized nuclear unit power plant system (SNUPPS) design. The Callaway Plant FSAR was submitted to the Nuclear Regulatory Commission (NRC) in support of the application by Union Electric for a Class 103 license to operate a nuclear power facility. The FSAR was originally submitted in two parts; the SNUPPS Standard Plant and the Callaway Site Addendum. Some of the chapters common to both reports are currently being combined into one report, the Callaway - Standard Plant. However, in the fire protection area (Section 9.5.1) a SNUPPS Standard Plant Section and a Callaway Site Addendum still exists. Because of similarities to the 10 CFR Part 52 licensing process, the staff believes that the Callaway Site Addendum is particularly useful for addressing expectations of a COL applicant.

The staff proposed that the following information should be provided for the fire protection program at the COL stage in order to issue a COL without ITAAC for that program:

1. The information in the referenced DCD or the applicable analogous information that addresses the COL action items contained in the DCD. For this example, the staff used the COL action items contained in the AP600 DCD.
2. Fire protection program information at a level of detail similar to that contained in Section 9.5.1 of the SNUPPS system standard plant FSAR (and the applicable appendices) for the Callaway Plant.

3. Fire protection program information at a level of detail similar to that contained in Section 9.5.1 (and the applicable appendices) of the Site Addendum portion of the FSAR for the Callaway Plant.
4. Fire protection program information similar to that contained in the following Callaway Plant fire protection program procedures:
 - APA-ZZ-00700, "Fire Protection Program"
 - APA-ZZ-00701, "Control of Impairments of Fire Protections Systems and Components"
 - APA-ZZ-00703, "Fire Protection Operability Criteria and Surveillance Requirements"
 - APA-ZZ-0741, "Control of Combustible Materials"
 - APA-ZZ-00742, "Control of Ignition Sources"
 - APA-ZZ-00743, "Fire Team Organization and Duties"
 - EDP-ZZ-04044, "Fire Protection Reviews"
5. Fire protection implementing information unique to the fire protection program. Examples include procedures similar to the following Callaway Plant procedures:
 - EIP-ZZ-00226, "Fire Response Procedure for the Callaway Plant"
 - FPP-ZZ-0XXXX, "Series of Procedures, Pre-Fire Strategy Procedures"
 - FPP-ZZ-00009, "Fire Protection Training Program"
 - HTP-ZZ-05006, "Fire Involving Radioactive Material or Entry into the RCA"
 - SDP-KC-00002, "Fire Door Position Verification"
 - MSM-ZZ-FG002, "Fire Damper Inspection and Drop Test"
 - QSP-ZZ-65045, "Fire Barrier Penetration Seal Visual Inspection"
6. In addition, the staff proposed that the COL applicant have a license condition similar to Callaway License Condition 2.C(5)(d) for the fire protection program:

The licensee may make changes to the approved fire protection program without prior approval of the Commission only if those changes would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire.

Each of these 6 items is discussed in more detail below.

AP600 COL Action Items

COL applicants and licensees who reference the certified AP600 standard design will satisfy the requirements and commitments in the DCD, which is the controlling document used in the certification of the AP600 design. Certain items are identified in the AP600 DCD as "Combined License Information Items," and in NUREG-1512, "Final Safety Evaluation Report Related to the Certification of the AP600 Standard Design" (September 1998), as "COL Action Items." These COL action items relate to programs, procedures, and issues that are outside of the scope of the certified design review. These COL action items do not establish requirements; rather, they identify an acceptable set of information for inclusion in a plant-specific DCD. An applicant for a COL should address each of these items in its application. An applicant may

deviate from or omit these items, provided that the deviation or omission is identified and justified in the plant-specific DCD.

For the AP600, Westinghouse included a summary of COL action items in DCD Table 1.8-2, and provided an explanation of the items in the applicable sections of the DCD. Throughout NUREG-1512, the staff identified a number of COL action items that resulted from its review. Each COL action item was assigned a unique identifying number. The number identifies the section in NUREG-1512 where the item is described. For example, COL Action Item 5.3.2-1 is discussed in Section 5.3.2 of NUREG-1512. The COL action items identified in NUREG-1512 are cross-referenced against those identified by Westinghouse in DCD Table 1.8-2 in the following table.

FSER Item	DCD Table 1.8-2	DCD Section	Description
9.5.1-1(a)	9.5-1	9.5.1.8	The COL applicant will establish a fire protection program at the facility for the protection of structures, systems, and components important to safety, and the procedures, equipment and personnel needed to implement the program.
9.5.1-1(b)	9.5-1	9.5.1.8, Tbl. 9.5.1-1	The implementation of the fire protection program prior to receiving fuel onsite for fuel storage areas, and for the entire unit prior to reactor startup is the responsibility of the COL applicant.
9.5.1-1(c)	9.5-1	9.5.1.8, Tbl. 9.5.1-1	The establishment of administrative controls to maintain the performance of the fire protection systems and personnel is the responsibility of the COL applicant.
9.5.1-1(d)	9.5-1	9.5.1.8, Tbl. 9.5.1-1	The establishment of a site fire brigade trained and equipped for fire fighting to ensure adequate manual fire fighting capability for all plant areas containing structures, systems, or components important to safety is the responsibility of the COL applicant.
9.5.1-1(e)	9.5-1	9.5.1.8, Tbl. 9.5.1-1	The establishment of a quality assurance program to ensure that the guidelines for the design, procurement, installation and testing, and the administrative controls for fire protection systems are satisfied is the responsibility of the COL applicant.
9.5.1-1(f)	9.5-1	9.5.1.8, Tbl. 9.5.1-1	Inspection and maintenance of fire doors, access to keys for the fire brigade and the marking of exit routes is the responsibility of the COL applicant.

FSER Item	DCD Table 1.8-2	DCD Section	Description
9.5.1-1(g)	9.5-1	9.5.1.8, Tbl. 9.5.1-1	The collection and sampling of water drainage from areas that may contain radioactivity is the responsibility of the COL applicant.
9.5.1-1(h)	9.5-1	9.5.1.8, Tbl. 9.5.1-1	The control of the use of compressed gases inside structures is the responsibility of the COL applicant.
9.5.1-1(i)	9.5-1	9.5.1.8, Tbl. 9.5.1-1	Portable radio communication for use by the plant fire brigade is the responsibility of the COL applicant.
9.5.1-1(j)	9.5-1	9.5.1.8, Tbl. 9.5.1-1	Fire protection inside containment during refueling and maintenance is the responsibility of the COL applicant.
9.5.1-1(k)	9.5-1	9.5.1.8, Tbl. 9.5.1-1	The control of combustible materials in the remote shutdown workstation is the responsibility of the COL applicant.
9.5.1-1(l)	9.5-1	9.5.1.8, Tbl. 9.5.1-1	Fire protection for cooling towers is the responsibility of the COL applicant.
9.5.1-1(m)	9.5-1	9.5.1.8, Tbl. 9.5.1-1	The proper storage of welding gas cylinders is the responsibility of the COL applicant.
9.5.1-1(n)	9.5-1	9.5.1.8, Tbl. 9.5.1-1	The proper storage of ion exchange resins is the responsibility of the COL applicant.
9.5.1-1(o)	9.5-1	9.5.1.8, Tbl. 9.5.1-1	The proper storage of hazardous chemicals is the responsibility of the COL applicant.
9.5.1-2	9.5-2	9.5.1.8	The revision of the fire hazard analysis to reflect the actual plant configuration is the responsibility of the COL applicant.
9.5.1-3	9.5-4	9.5.1.8	The COL applicant is responsible for ensuring that any deviations from the applicable National Fire Protection Association (NFPA) codes and standards in addition to those specified in the standard safety analysis report (SSAR) are incorporated in to the final safety analysis report with appropriate technical justification.

The staff will review the COL information against the requirements that are applicable and in effect at the time of the COL application. It should be noted that, as with the design certification reviews, any changes to the applicable regulations made from the time of the COL application to COL issuance (if the Commission deems issuing a COL appropriate) would have to be

reflected in the application and the staff's review, as set forth in the statements of consideration for those changes.

If a COL application were received today, the staff would review the information in accordance with the requirements contained in 10 CFR 50.48, "Fire Protection," and GDC 3, "Fire Protection," of Appendix A to 10 CFR Part 50. Conformance with the Standard Review Plan (SRP) is addressed in 10 CFR 50.34(h), which specifies that applications include an evaluation of the facility against the SRP. The fire protection guidance for nuclear power plants specified in the SRP is provided in Branch Technical Position (BTP) Chemical and Mechanical Engineering Branch (CMEB) 9.5-1, "Guidelines for Fire Protection for Nuclear Power Plants," Revision 2, July 1981. In addition to the guidance specified in the BTP, the staff has specified that advanced light-water reactors should provide an enhanced level of fire protection to ensure that safe shutdown can be achieved, assuming all equipment in any one fire area is rendered inoperative as a result of fire damage and that reentry into the fire area by plant personnel for repairs or operator interactions is not possible. The staff's technical positions relating to an enhanced level of fire protection for advanced light-water reactors are contained in the following documents:

- SECY-90-016, "Evolutionary Light Water Reactor (LWR) Certification Issues and Their Relationship to Current Regulatory Requirements," January 12, 1990, and the associated SRM dated June 26, 1990,
- SECY-93-087, "Policy, Technical, and Licensing Issues Pertaining to Evolutionary and Advanced Light-Water Reactor Designs," April 12, 1993, and the associated SRM dated July 21, 1993, and
- Section 9.3 of NUREG-1242, "NRC Review of Electric Power Research Institute's Advanced Light Water Reactor Utility Requirements Document," August 1992.

In addition, applicable NFPA codes, standards, and recommended practices will be used to aid the staff's review. The staff also believes that Regulatory Guide 1.189, "Fire Protection for Operating Nuclear Power Plants," April 2001, will provide useful guidance for its review of a COL application.

With the exception of Regulatory Guide (RG) 1.189, which was published after the AP600 final safety evaluation report (FSER) was issued, the AP600 was reviewed against the requirements and guidance identified in the previous paragraph. The AP600 fire protection program can be found in Section 9.5.1 of the AP600 DCD and the staff's safety evaluation can be found in NUREG-1512, Section 9.5.1.

In order to facilitate public comments on this proposal during the Summer of 2003, the staff placed the proposal as well as background documentation on the NRC's public Web site. The web address for this information is the following:

<http://www.nrc.gov/reactors/new-licensing/col-supporting-documentation.html>.

To place this portion of the staff's proposal in context, the staff placed the following information on the Web:

- AP600 DCD, Section 9.5.1
- NUREG 1512, Section 9.5.1
- Regulatory Guide 1.189

SNUPPS Standard Plant FSAR for the Callaway Plant

The Standard Plant FSAR for the Callaway Plant provides information analogous to the AP600 DCD. The staff believes that Callaway's Standard Plant FSAR information can place in context the information that is contained in the Site Addendum portion of the Callaway FSAR. Therefore, the staff provided the following information on the NRC's public Web site to place this portion of the staff's proposal in context:

- Callaway FSAR Standard Plant Section 9.5.1, "Fire Protection System"
- Callaway FSAR Standard Plant Appendix 9.5A, "Design Comparison to Regulatory Positions of Regulatory Guide 1.120, Revision 1, Dated November 1977, Titled - Fire Protection Guidelines for Nuclear Power Plants"
- Callaway FSAR Standard Plant Appendix 9.5B, "Fire Hazards Analysis"

Site Addendum Portion of the FSAR for the Callaway Plant

The staff believes that the Site Addendum portion of the FSAR for the Callaway Plant provides useful guidance for a COL application. For example, Site Addendum Sections 9.5.1.5, "Personnel Qualification and Training," 9.5.1.8, "Callaway Plant Fire Brigade," 9.5.1.9, "Fire Fighting Procedures," and 9.5.1.12, "Administrative Controls," provide examples of the level of detail that the staff would expect in a COL application for these areas. Therefore, the staff provided the following information on the NRC's public Web site to place this portion of the staff's proposal in context:

- Callaway FSAR Site Addendum Section 9.5-1, "Fire Protection System"
- Callaway FSAR Site Addendum Appendix 9.5A, "Fire Protection Evaluation"
- Callaway FSAR Site Addendum Appendix 9.5B, "Fire Hazards Analysis for Site Facilities Outside the Standard Power Block"
- Callaway FSAR Site Addendum Appendix 9.5E, "Fire Protection Evaluation"

Fire Protection Program and Implementing Procedures

The NRC staff proposes that in addition to the information provided above, the type of information provided in procedures directly related to the implementation of the fire protection program should be supplied at the time of the COL application so that the NRC can make a decision before the COL is granted regarding the need for ITAAC for the fire protection program. Callaway's procedure APA-ZZ-00700, "Fire Protection Program" contains an Appendix 2 which lists the following as fire protection program documents:

- FSAR, Standard Plant, Sections 9.5.1, 9.5.2, and 9.5.3, and Appendices 9.5A through E
- FSAR Site Addendum, Sections 9.5.1, and 9.5.2, and Appendices 9.5A through E

- The fire protection program as described in the Safety Evaluation Report (SER) through Supplement 4
- APA-ZZ-00701, "Control of Impairments of Fire Protections Systems and Components"
- APA-ZZ-00703, "Fire Protection Operability Criteria and Surveillance Requirements"
- APA-ZZ-0741, "Control of Combustible Materials"
- APA-ZZ-00742, "Control of Ignition Sources"
- APA-ZZ-00743, "Fire Team Organization and Duties"
- EDP-ZZ-04044, "Fire Protection Reviews"

The staff believes that information similar to that contained in the procedures that are referenced in Appendix 2 to APA-ZZ-0700 and APA-ZZ-0700 itself should be furnished for staff review at the time of the COL application. Therefore, the staff provided the Callaway fire protection implementing procedures listed above on the NRC's public Web site to place this portion of the staff's proposal in context.

Fire Protection Procedures Unique to the Fire Protection Program

In addition to the procedures listed above that are an integral part of Callaway's fire protection program, there are other procedures that are unique to Callaway's fire protection program that describe the program's implementation. Procedures that are referenced by the fire protection program procedures include the following:

- EIP-ZZ-00226, "Fire Response Procedure for the Callaway Plant"
- FPP-ZZ-0XXXX, "Series of Procedures, Pre-Fire Strategy Procedures"
- FPP-ZZ-00009, "Fire Protection Training Program"
- HTP-ZZ-05006, "Fire Involving Radioactive Material or Entry into the RCA"
- SDP-KC-00002, "Fire Door Position Verification"
- MSM-ZZ-FG002, "Fire Damper Inspection and Drop Test"
- QSP-ZZ-65045, "Fire Barrier Penetration Seal Visual Inspection"

The staff proposes that the type of information provided in these "secondary" procedures should be furnished for review at the time of the COL application so that the NRC can make a decision before the COL is granted regarding the need for ITAAC for the fire protection program. A more detailed review of the fire protection procedures for an applicant may identify additional procedures that should be provided at the time of a COL application.

COL License Condition

Generic Letter (GL) 86-10, "Implementation of Fire Protection Requirements," and GL 88-12, "Removal of Fire Protection Requirements from Technical Specifications," discuss the regulatory treatment of the fire protection program. GL 86-10 requested that licensees incorporate the NRC-approved Fire Protection Program in their FSARs. GL 86-10 encouraged licensees, upon completion of this program, to apply for an amendment to their operating licenses (1) to replace current license conditions regarding fire protection with a new standard condition and (2) to remove unnecessary fire protection Technical Specifications (TS). GL 88-12 provided additional information in this area based on experience with implementation of GL 86-10 for new operating licenses.

GL 86-10 proposed the following standard fire protection license condition:

(Name of Licensee) shall implement and maintain in effect all provisions of the approved fire protection program as described in the Final Safety Analysis Report for the facility (or as described in submittals dated _____) and as approved in the SER dated _____ (and Supplements dated _____) subject to the following provision:

The licensee may make changes to the approved fire protection program without prior approval of the Commission only if those changes would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire.

The applicable License Condition for Callaway is contained in License Conditions 2.C(5)(c) and 2.C(5)(d). License Condition 2.C(5)(d) for Callaway states the following:

The licensee may make changes to the approved fire protection program without prior approval of the Commission only if those changes would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire.

SECY-00-0092, "Combined License Review Process," dated April 20, 2000, contains a proposed generic COL. The Commission approved the form and content of this generic COL in an SRM dated September 5, 2000. However, the proposed generic COL did not contain a fire protection program license condition similar to that contained in Callaway's license or discussed in Generic Letter 86-10. The staff believes that a COL should have a license condition for the fire protection program.